CIA

I.   PROJECT TITLE: Advanced Cartographic Support System

     Submitting Agency: CIA

II. COSTS (in thousands):   FY 1983   FY 1984

                                                                              25X1

III. DESCRIPTION OF PROJECT:

A.   Statement of Need

     Many intelligence production activities use geographic information
as an intelligence source. They are supported in part by cartographic
data bases maintained by OGSR designed to store cartographic features
in point or linear form for traditional use in the preparation of maps
and charts.   25X1

     A number of functions of interest to analysts cannot be manipulated
easily so support is less than adequate. Examples are overlapping
areas such as cities and industrial regions and other geographical fea-
tures such as rail and water systems, which are part of a larger target
complex.   25X1

     The geographic information systems must be enhanced and expanded
to support the needs of Agency personnel. In order to do so, several
functions are needed to support and supplement ongoing CIA programs
(e.g., NFAC's Analyst Productivity Theme, OGSR's Graphics Automation
Upgrade, NPIC's NDS).   25X1

     One need is a cartographic data base management system that will
support basic analytical problems requiring a computer system contain-
ing geographic information identified other than by location, e.g.,
"is this point   " "is this river a tributary of the   "   25X1
Research must be done to identify the type of information needed by
analysts, how the information should be stored, and how existing data
bases can be efficiently transformed and enhanced.   25X1

     A second need is a system which must be able to maintain
geographical relationships such that they can be accessed across a
variety of applications. The system should be designed to be com-
patible with the needs and products of other systems (e.g., NPIC's
NDS, CAMS).   25X1

     Additional research is needed on:

     o   communication of geographic information among different
         systems and devices (e.g., graphics shops, television
         centers)

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o specialized mapping techniques for showing
   information, i.e., showing the size of a
   country according to its population
   rather than its area

o raster and vector data merger. [   ]   25X1

B. Who will Accomplish

The proposed work will be done by ORD with external contractor
assistance. ORD will work closely with OGSR graphic and cartographic
staff members and other Agency groups on applying the research re-
sults to real-world analytical problems and systems. [   ]   25X1

C. What is to be Developed

We will develop the following products:

o define and establish the set of analytical
   requirements for support

o a system which will integrate the appropriate
   external software of existing Agency systems
   (e.g., WORLD DATA BANK, CAM, MAGAS, TACK)

o define and undertake research and development
   efforts for which no existing methodologies
   are sufficient

o automated digitization and map building

o specialized mapping techniques

o query systems for analysts using multiple-
   source data with geographic data bases

o formatting techniques, especially for
   communicating information among different
   offices and media. [   ]   25X1

D. Time Phasing

This project builds upon and supports on-going ORD and Agency
projects. Most of the groundwork and preliminary analysis will be
completed in FY 1982. The first year of the DCI Enhancement will
provide for system integration and the first research projects. The
second year's funding will be devoted to research and development. [   ]   25X1

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IV. INTELLIGENCE COMMUNITY APPLICABILITY

The project will produce an enhanced World Data Bank, which is a major resource for the Community at large. Insofar as it supports COMIREX and NPIC, it should enhance the Community's capability as well. ORD and OGSR are already working together with NSA and other parts of the Community on graphics and cartography, and we assume that all research performed under this effort will be shared in a like manner. 25X1

V. INTELLIGENCE CONSUMER BENEFITS

The project will result in increased capability for analysts, cartographers, and graphic designers. This, in turn, should provide improved analysis and presentation of the analytical product. 25X1

VI. PROBABILITY OF SUCCESS

The probability is high for producing a system which will significantly improve geographic/cartography data handling and analysis. It is likely that it will improve the Agency's ability to handle more data with no increase in staffing. 25X1